

## C-A OPERATIONS PROCEDURES MANUAL

### 4.93.1 U-Line Upstream Access Security Gate Subsystem Check

Text Page 1 through 7

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials
_____	_____	_____	_____
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Revision 01

Approved by: \_\_\_\_\_  
AGS Department Chairman      Date

A. McGeary

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#### **4.93.1 U-LINE UPSTREAM ACCESS SECURITY GATE SUBSYSTEM CHECK**

1. Purpose and Scope

This procedure provides directions for the test and validation of the hardware and some software for the U-Line upstream gate subsystem of the RHIC Particle Accelerator Safety System (PASS).

2. Responsibilities

- 2.1 The RHIC or AGS Safety Systems Group Leader shall ensure that this procedure is executed, at no greater than six month intervals, or at such times as required by the Radiation Safety Committee (RSC).
- 2.2 The RHIC or AGS Safety Systems Group Leader shall review and initial the completed procedure checklist.
- 2.3 The RSC Chairman (or his designee) shall review the test results.
- 2.4 Members of the RHIC or AGS Safety System Group shall, as designated, conduct and document this procedure.
- 2.5 The software engineers shall ensure the configuration control of the software tested.

3. Prerequisites

- 3.1 This procedure may only be executed by members of the AGS or RHIC Safety System Group.
- 3.2 This procedure requires two individuals trained in this procedure for proper execution.
- 3.3 A Restricted Access zero key, Controlled Access #6 key and sweep/reset #7 key.
- 3.4 Standard electrical toolbag.
- 3.5 Proper setup and calibration of the current source boards should have been done before executing this procedure.
- 3.6 Programs loaded Divisions A & B for Peer 23 and recorded in PASS Engineering Change Log Book.

- 3.7 Peer 23 enclosure RSC is RS LOTO by AGS Safety Systems Group Leader Engineers.  
Peer 23 (Tag #) \_\_\_\_\_  
Peer 23 (Tag #) \_\_\_\_\_  
RS LOTO Development System Access Connector (Tag #) \_\_\_\_\_
- 3.8 Prior to the execution of this procedure, the beam line shall be placed in a safe off condition by performing RS LOTO. RS LOTO of Booster F6 and BTA DH2&3 or equivalent approval by Chair RSC prior to execution of this procedure.  
RS LOTO applied \_\_\_\_\_
- 3.9 Notify the Operations Coordinator (OC) or the Main Control Room (MCR) supervisor that the U-Line upstream gate system is being tested.
- 3.10 Post Notices in the MCR and at the UGE1 and UGI1 gates that the gate system is being tested.

4. Precautions

None

5. Procedure

This test will verify the following for both A and B divisions:

Door switch and crash glass switch  
Strike solenoid and latch switch  
Gate reset function and local indication  
Sweep check station function and indication  
Other indicator lamps at gate  
MCR interface - AB Panelview 1400

- 5.1 From QA Office in 911 Safe Log Book, record software installed Peer 23, both Divisions A & B.

Division A Compiler version \_\_\_\_\_

Division B Compiler version \_\_\_\_\_

Peer 23 Div. A Program \_\_\_\_\_

Save date \_\_\_\_\_

Peer 23 Div. B Program \_\_\_\_\_

Save date \_\_\_\_\_

5.2 UGE1 Gate Door switch, Crash Glass and Latch Switch (C1028015)

5.2.1 Insure UGI1 Door is closed.

Door Closed \_\_\_\_\_

5.2.2 Perform a physical inspection of the gate to confirm its proper mechanical operation, that the position sensing limit switches are properly aligned and the integrity of the wiring. Check for simple exit through the gate by means of the inside doorknob.

Switch alignment OK \_\_\_\_\_

Wiring OK \_\_\_\_\_

Exit by doorknob OK \_\_\_\_\_

Door locked preventing entry from outside \_\_\_\_\_

5.2.3 Panelview should indicate OPEN for crash glass switch or latch switch or door switch open. Check A division hardware first, then B division. Note that B division has no latch switch.

Any A division switch open indicates OPEN on Panelview \_\_\_\_\_

All A division switches closed indicates NOT RESET on Panelview \_\_\_\_\_

Any B division switch open indicates OPEN on Panelview \_\_\_\_\_

All B division switches closed indicates NOT RESET on Panelview \_\_\_\_\_

5.3 UGI1 Gate Door switch, Crash Glass and Latch Switch (C1028016)

5.3.1 Insure door UGE1 is closed.

Door closed \_\_\_\_\_

5.3.2 Perform a physical inspection of the gate to confirm its proper mechanical operation, tha the position sensing limit switches are properly aligned and the integrity of the wiring. Check for simple exit through the gate by means of the inside doorknob.

Switch alignment OK \_\_\_\_\_

Wiring OK \_\_\_\_\_

Exit by doorknob OK \_\_\_\_\_

Door locked preventing entry from outside \_\_\_\_\_

5.3.3 Panelview should indicate OPEN for crash glass switch or latch switch or door switch open. Check A division hardware first, then B division. Note that B division has no latch switch.

Any A division switch open indicates OPEN on Panelview \_\_\_\_\_

All A division switches closed indicates NOT RESET on Panelview \_\_\_\_\_

Any B division switch open indicates OPEN on Panelview \_\_\_\_\_

All B division switches closed indicates NOT RESET on Panelview \_\_\_\_\_

5.4 UGE1 Electric Strike and Status Lamps (C1028015)

5.4.1 Use Panelview to select Peer23 SAFE STATE.

Check that CONTROLLED ENTRY lamp is lit \_\_\_\_\_  
Check that #6 key with simultaneous release (S/R) will release electric strike but  
key or S/R alone will not \_\_\_\_\_  
Simultaneous release should be audible at gate \_\_\_\_\_  
Check that zero key is inoperative \_\_\_\_\_

5.4.2 Use Panelview to select Peer23 R/A.

Check that RESTRICTED ACCESS lamp is lit \_\_\_\_\_  
Check that zero key will release electric strike \_\_\_\_\_  
Check that #6 key is inoperative with or without S/R \_\_\_\_\_

5.4.3 Use Panelview to select Peer23 C/A.

Check that CONTROLLED ENTRY lamp is lit \_\_\_\_\_  
Check that #6 key with simultaneous release (S/R) will release electric strike but  
key or S/R alone will not \_\_\_\_\_  
Simultaneous release should be audible at gate \_\_\_\_\_  
Check that zero key is inoperative \_\_\_\_\_

5.5 UGI1 Electric Strike (C1028016)

5.5.1 Use Panelview to select Peer23 SAFE STATE.

Check that CONTROLLED ENTRY lamp is lit \_\_\_\_\_  
There is no Controlled Entry #6 keyswitch at this gate \_\_\_\_\_  
Check that zero key is inoperative \_\_\_\_\_

5.5.2 Use Panelview to select Peer23 R/A.

Check that RESTRICTED ACCESS lamp is lit \_\_\_\_\_  
Check that zero key will release electric strike \_\_\_\_\_  
Check that a S/R does not release electric strike \_\_\_\_\_

5.5.3 Use Panelview to select Peer23 C/A.

Check that CONTROLLED ENTRY lamp is lit \_\_\_\_\_  
There is no Controlled Entry #6 keyswitch at this gate \_\_\_\_\_  
Check that zero key is inoperative \_\_\_\_\_

5.6 UGE1 Gate Reset Function (C1028016)

5.6.1 There is no local gate reset function on this gate.

5.6.2 With all but two #7 keys captive, attempt to reset UGE1 Gate using Panelview button and #7 momentary keyswitch.

Panelview does not indicate UGE1 GATE RESET \_\_\_\_\_

5.6.3 With all but last #7 key returned and captive reset UGE1 using Panelview button for UGE1 and #7 momentary keyswitch in the U up key panel and observe that Panelview indicates gate reset.

Panelview indicates UGE1Gate reset \_\_\_\_\_

5.6.4 Check that Panelview indicates UGE1 not reset when door is opened. Check indication for both divisions.

Panelview indicates gate not reset in A division for door open \_\_\_\_\_

Panelview indicates gate not reset in B division for door open \_\_\_\_\_

5.7 UGI1 Gate Reset Function (C1028016)

5.7.1 When #7 key is turned at either inside and outside control station and all switches are closed, gate should reset. Panelview should indicate GATE RESET.

5.7.2 GATE RESET lamps on inside and outside should light to indicate that UGI1 gate is reset.

Reset lamp inside lights \_\_\_\_\_

Reset lamp outside lights \_\_\_\_\_

Panelview indicates UGI1 GATE RESET \_\_\_\_\_

5.7.3 Check that Panelview indicates UGI1 not reset when door is opened. Check indication for both divisions.

Panelview indicates gate not reset in A division for door open \_\_\_\_\_

Panelview indicates gate not reset in B division for door open \_\_\_\_\_

5.8 Sweepcheck station function, CS1 through CS3, passage through gate while sweep is maintained, loss of sweep on R/A when door is opened, and loss of sweep for crash cord operated.

5.8.1 Use Panelview to select Peer23 R/A.

5.8.2 At CS1 just upstream of UGI1, turn #7 key.

Sweep lamp does not light \_\_\_\_\_

- 5.8.3 Use Panelview to select Peer23 C/A.
- 5.8.4 At CS1 just upstream of UGI1, turn #7 key.  
Sweep lamp flashes momentarily to indicate correct sweep sequence \_\_\_\_\_
- 5.8.5 At CS2 at alcove near FEB Gate 2, turn #7 key.  
Sweep lamp flashes momentarily to indicate correct sweep sequence \_\_\_\_\_
- 5.8.6 At CS3 just inside of UGE1 Gate, turn #7 key.  
Sweep lamp lights and stays on to indicate completion of sweep \_\_\_\_\_
- 5.8.7 Observe that Panelview 1400 indicates that the area is swept.
- 5.8.8 Exit area with S/R and observe sweep lamp remains on \_\_\_\_\_
- 5.8.9 Reenter area with S/R and observe sweep lamp remains on \_\_\_\_\_
- 5.8.10 Exit area without S/R and observe loss of sweep \_\_\_\_\_
- 5.8.11 Repeat steps 5.8.4 through 5.8.6 except skip CS2. AREA SWEPT lamp will not light and Panelview will indicate SWEEP NO GOOD.  
Panelview and lamps at gate do not light \_\_\_\_\_
- 5.8.12 Go back to CS2 and turn #7 key.  
Sweep lamp does not light \_\_\_\_\_
- 5.8.13 Re-sweep area, go to R/A and open gate.  
Sweep is lost when gate is opened on R/A \_\_\_\_\_
- 5.8.14 Re-sweep area on C/A and operate crash cord; observe loss of sweep \_\_\_\_\_
- 5.9 Restore area to original configuration.
  - 5.9.1 Notify MCR OC that the system test is complete.
  - 5.9.2 Remove posted notices in MCR and at UGE1 and UGI1.
  - 5.9.3 Remove LOTO of critical devices for this area.
- 5.10 The certification of the system is completed when the Safety System Group Leader and the RSC Chair approve the completed checkout log sheets.

6. Documentation

6.1 Completed U-Line Upstream Access Security Gate Subsystem Check (this procedure)

6.2 PASS Maintenance Log Book

7. References

None

8. Attachments

None